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ABSTRACT

A practicum was developed to aid second graders who were experiencing difficulties in reversals and transpositions of letters, words, and numbers in written language and math. At each teacher's recommendation, one or two children demonstrating reversal problems were given help to reduce their reversals. A series of language arts and math tests were given as pre- and posttests. Students also worked on increasing their critical thinking skills and positive attitude towards school. Activities including kinesthetic, auditory, and visual exercises were used during the study. Better communication among the second grade teachers was an objective met by holding bi-monthly meetings and having an agenda. Results of the practicum showed that by utilizing certain kinesthetic activities the number of reversals in a student's academic performance was reduced. (Nine appendixes include profiles of the study group and evaluations between pretests and posttests.) (Author/PRA)

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REDUCTION OF REVERSALS AT THE SECOND GRADE LEVEL IN THE ACADEMIC WORK OF STUDENTS

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A Practicum Report

submitted to the Faculty of the Center for the Advancement of
Nova University in partial fulfillment of the requirements
for the degree of Master of Science

The abstract of this report may be placed in a
National Database System for reference

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Abstract

Reduction of Reversals at the Second Grade Level in the Academic Work of Students.
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Descriptors: Writing Difficulties/Reading Difficulties/ Remedial Reading/Remedial Mathmatics/Learning Problems/ Learning Disabilities/Learning Modalities/Logical Thinking/ Problem Solving/Critical Thinking/Thinking Skills/Elementary Education/Primary Education/Grade 2 /Elementary School Students/

There was a concern among the second grade teachers about certain children in their classes. These children were experiencing difficulties in reversals and transpositions of letters, words, and numbers in written language and math. At each teacher's recommendation, one or two children demonstrating reversal problems were given help to reduce their amount of reversals. A series of language arts and math tests were given in a pre test to be compared to the same series given as a post test at the end of the study to measure the objectives. Students also worked on increasing their critical thinking skills and positive attitude towards school. Activities including kinesthetic, auditory, and visual exercises were used during the study. A better communication between the second grade teachers was an objective met by holding bi-monthly meetings and having an agenda. Results of the study proved that by utilizing certain kinesthetic activities the number of reversals in a student's academic performance can be reduced. Appendices included profiles of the study group and evaluations between pre tests and post tests.

Authorship Statement

I hereby testify that this paper and the work it reports are entirely my own. When it has been necessary to draw from the work of others, published or unpublished, I have acknowledged such work in accordance with accepted scholarly and editorial practice. I give this testimony freely, out of respect for the scholarship of other professionals in the field and in the hope that my own work, presented here, will earn similar respect.

Signed Susan Gower

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Chapter I

Purpose

Background

The total enrollment of the school was 840 students. This population was made up of 40 percent minorities, of which 17 percent were Black, 20 percent were Mexican-American, and 3 percent were of other minorities. The socio-economic status was that of middle to lower class, with more students belonging to the lower socio-economic level. The school offered a free lunch program. Forty-nine percent of the school's children took part in this program. Another 11 percent of the children were on the reduced lunch. Because percentage of children on the free lunch program, the school was required to offer a free breakfast program.

There were 30 teachers with an average class size of 26 students. There was also one full time teacher of children

with varying exceptionalities, that had a class size of ten students. This class included students who were educably mentally handicapped, emotionally handicapped, or had a specified learning disability. The school had one teacher of emotionally handicapped students. This class had seven children. Three other teachers of specific learning disabled (SLD) students were employed at the school. They served approximately 62 part-time students.

The writer was a second year, second grade teacher, who noticed a problem of letter, word, and number reversals in the academic work ofsecond grade students. A letter reversal is a letter printed or read backwards. A word reversal is a word printed or read backwards. Number reversals are numbers printed or read backwards.

Problem Statement

There were at least two children in each of the five second grade classrooms at this site that had reversal problems.

By the end of the study, however, two of the children had moved, and one child was withdrawn at the teacher's request. Working with the writer's mentor, the writer developed a list of target students from the second grade teachers. These students all had difficulties with reversals, as documented by the second grade teachers. (Appendix A. 41)

Although reversals in kindergarten and first grade are not very uncommon, children should not be having reversal problems by mid-second grade. These reversals in reading include letter and word reversals. In math, reversals include transposing numbers as well as writing them backwards.

Students that have reversal problems tend to have a poor attitude towards school and the curriculum, according to discussions held with second grade teachers at this school. These students usually try hard in school and they cannot comprehend why they can't accomplish the work. The writer

and the other second grade teachers noticed this problem of a poor attitude, at the beginning of the year, among almost all of their students who had reversal difficulties. These children often become very frustrated and eventually gave up.

There should be a level that each students reaches successfully. With practice and each student's committment to learn what they were doing wrong, they were able to reach a point where they accomplished most of the work. By doing this, they achieved a better attitude towards school, and it would not be as frustrating for them.

Children must be taught how to think, not just what to think. The students in the study group were often taught what to think, according to the second grade teachers, who answered a related question positively on the Barell Checklist (1989). The students were not aware of how to analyze a problem or solve a problem with the ability to understand why the answer made sense, according to Bellanca (1989).

Critical thinking skills were used with the target group. They thought critically about and answered questions concerning a problem situation. They also posed questions and attempted to analyze information.

The second grade teachers noticed that many of their children did not use critical thinking skills. Most students gave back the information they have received without attempting to understand why the information was correct. When asked to pose questions concerning the information, many students could not or did not wish to do so. Many students asked their teachers what the answers were without attempting to solve the problems themselves.

The six classrooms of the second grade teachers were physically spread apart in the school. One classroom was in half of a prtable. This classroom belonged to a beginning teacher. Two classrooms were located at opposite ends of the

hallway, and the remaining three were together on another hallway. Because of this, it was very difficult to share ideas as well as physical items such as films and books. Grade level meetings were not as productive as they could be, according to some of the teachers. While they did cover the agenda, they rarely discussed or shared ideas of what each was doing in their own classroom.

Outcome Objectives

1) Within a period of 12 weeks, students in the target group were expected to decrease their usage of reversals by 70 percent in their problem area(s) of reading, writing, mathematics, or a combination of the three areas as measured by comparing the results of a pre and post test devised by the writer. (Appendix B: 43 and Attachments: 60)

2) During the period of 12 weeks, each student was expected to develop a more positive attitude towards school and the

curriculum, increasing scores from the writer developed pretest by 50 percent on the post test. (Appendix C: 45)

3) Critical thinking skills were to increase 50 percent in the process used by each student to solve the problems. This was determined by a comparison of the results in a list devised by the writer. (Appendix D: 47)

4) Over a period of 12 weeks, the writer worked to develop a collaborative relationship in the second grade level to accomplish the goals of this practicum. The writer also wished to increase communication between second grade teachers. The accomplishment of this objective was measured by comparing the productiveness of the first meeting held during the study with the productivness of the meetings held during the study. A log was kept of each meetings to document the success of this objective. (Appendix E: 49)

Chapter II

Research and Solution Strategy

Many parents of kindergarten and first grade children are concerned when their child is producing reversals in reading, writing, or mathematics. Because these subjects are still farily new to the child in these stages, teachers will usually assure parents that these reversals will, in most cases, correct themselves by second grade. By the middle of second grade, if a child continues to make reversal errors, there might exist a learning disability.

Reversals seem to occur periodically with almost all adults, but the child who consistently displays this type of problem must receive special attention. According to Money,

> . . .a cup is a cup, whether it is sitting or hanging, upright or inverted, seen from below or above one's eyes, with a handle to the left or right. . .Not so with the characters of the alphabet like "b" and "d", "p" and "q". And not so with the arrangement of

> the alphabetic character in words. . .w-o-r-d is not the same as r-o-w-d-y, but they may be to the dyslexic, since the same five letters are in each." Money, 1962.

The term dyslexia, according to Money, means defective reading. The cause may be the result of a brain injury, or it may be the result of a deverlopmental problem. If it is a brain injury, there may not be much that can be done to further develop a student's learning. However, if the learning disability is a developmental problem, there are possibilities that the child may overcome or at least improve the problem areas.

This problem, termed dyslexia, has been used to refer to those with a specific learning disability. It is not clearly defined or identified. Sometimes reading problems can be caused by outside factors, including poor motivation, home problems, or poor attendance. However, many children have difficulty in reading despite the absence of these distraction.

Some problems dyslexics possess, according to Flemming, are severe difficulties in learning and remembering printed words, reversals of letters or transposition of words, letters, or numbers, poor handwriting, and strange spelling errors. Flemming claims most children experiencing reversal problems have inherited these traits. These hereditory dyslexics see a "b" in "boy" as a three-dimensional ball instead of a two-dimensional symbol.

According to Jordan (1987), there exists visual dyslexia and auditory dyslexia. Visual dyslexia refers to the desire a child has to reverse or rotate letters or numbers as well as scramble the order of words or letters. They have an inability to interpret many letters and numbers correctly. Although many dyslexic children have vision problems, it is an incorrect assumption that correcting the vision will correct the reversal problem. Jordan states that the left side of the brain is responsible for learning to read, remembering facts,

and putting this information on paper. Dyslexic children have a "left brain deficit that makes it difficult or impossible to process classroom information that depends on rapid interpretation of printed symbols, comprehension of oral language, and long-term memory for the myriad of facts our culture regards as important." (Jordan, 1989: 22)

Auditory dyslexic children do not correctly interpret certain speech sounds. They have difficulty identifying rhyming words and connecting sounds to letters. Auditory dyslexic children have an "inability to hear the separate sounds of spoken language in correct sequence." (Jordan, 1989: 57) Because these children do not hear the sound order correctly, it is difficult for them to write down the correct words. These children usually try very hard in school. They become frustrated when they cannot give the correct answer. They respond to what they hear, and if they are not hearing correctly, they will not respond correctly.

Other common symptoms of an auditory dyslexic child is confusion with spelling words. The child may have tremendous difficulty remembering how to spell words when given to the child orally. This child may also omit sounds or add sounds to words.

Often errors that dyslexics make can be seen in the work of children beginning to read. Letter reversals are not uncommon at the beginning stages of learning to read (b/d: q/p). Also, directional mistakes can be seen (was,saw).

There are many symptoms that deal with this problem. However, it still may be difficult to diagnose dyslexia. A child may reverse letters, but this may be caused by reasons other than dyslexia, including immaturity or a low level or reading ability. The writer realizes that the student with the problem of reversals will need to overcome or lessen the problem to some extent to be successful in school. Through activities and practice during the study, all of the children will be expected

to lower the number of reversals made in reading, written language, and math. The problem of reversals in a student's academic work was often blamed on poor eyesight. Vallutino (1979) performed studies on this idea to find out if this were true. In one study, he tutored some children having reading problems and discovered that they did not have any visual deficits. He then designed and directed a series of studies stemming from the fact that that children seemed to have difficulties with printed words as well as word retrieval. The writer will use activities dealing with word retrieval in the study.

Vellutino noted that in a study by Bryant (1965), and Eisenberg (1966), four times more boys than girls have reading problems, and within the same family, there are usually more than one dyslexic. When gathering information about the target group, the writer noticed that there were dyslexics within the same families as the study group. Vellutino also

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discovered that dyslexics seem to have more difficulties in spatial and directional concepts, such as telling time, naming the days of the week, and distinguishing left from right. Although some people have a few of these difficulties occasionally, there are children who show many of these characteristics every day. These difficulties can be seen in their school work.

Flemming (1980) was an adult when it was discovered that the reading problems the author had as a child remained throughout the author's life was termed dyslexia. This disability is probably inherited and more than 23 million Americans have it to some degree. Flemming explains how difficult the childhood years were because of the reading problem. Despite the fact that Flemming wanted to read and excel in academics, the author had a barrier. Those with dyslexia do not process material as other people do. They think in pictures instead of words. The writer became

more sympathetic with the capabilities with children that have dyslexic tendencies. Certain lessons and assignments must be adapted so these children can succeed.

Most disturbing, however, was the fact that they have difficulty remembering words and syllables, and frequently reversed the letters or word sequence. The writer used activities to enable the target group to practice remembering words and syllables in correct sequence. Flemming's five children all exhibited similar problems and were diagnosed as being dyslexic.

In a society where many parents seem too busy to help their children with their homework, an approach used by two school in the United Kingdom proved quite successful. Three staff members from three schools wanted to develop a program to assist children identified as dyslexic or remedial. (Bartlet, Hall, and Neale, 1984)

In the program, the aid of the children's parents was vital. The initial meeting with the parents and teachers discussed what strategies that parents would use. The parents were to change some negative behavior they might be having with their child concerning reading. This might include using less pressure to read at home, helping to decode words, and encouraging reading by praising. The writer used these techniques with the target group, and encouraged the parents to also use them when their children read at home.

Many of these children had been identified as failing readers, yet proved that their reading skills had improved. The project found that having parents involved in their child's reading was highly motivating and successful for the child. This project expanded to other schools, and has been accepted as well as successful in all of them. This was a program that would probably benefit any school in which it was implemented.

School should be a place where students will learn not only what to memorize and be able to repeat back, but to ask questions and inquire about the material. Teachers should organize the school curriculum so that the teachers can pose problems concerning the information taught to the students so they must analyze and figure out the answers.

According to Costa (1989), thinking can be divided into at least three parts. Among those are brain functioning and metacognition. Brain functioning refers to the neurological process in which a person thinks. This includes what causes emotions, why dreams occur, how memory works, and how learning takes place. Metacognition is the act of being conscious about thinking. Those who plan what they will do before they began a task, as well as moniter and evaluate themselves, have good metacognition skills. In the classroom, teachers can help students acquire these skills by having discussions on what thinking is going on in their heads as they

attempt to solve problems. Also, teachers can help students learn how to study, which might include visual, auditory, of kinesthetic stratiegies. Dyslexic children are often slower to learn than non-dyslexic children. In a study done of children from a London school (Snowling, 1980), it was found that dyslexics are slower and more likely to make errors when attempting to read non-words or words they did not know. They had difficulties with consonant clusters and often reversed letter orders or made errors with similar shaped letters (p,b,d,q). Snowling suggests that this difficulty might lie in the visual processing of the information.

In addition to visual processing deficits, there are other factors that may contribute to reading problems. Among these are emotional and learning factors, and learning disabilities, such as word reversals. (Poostay and Aaron, 1982)

The first two might be changed or influenced more easily than the third. Once a child has been labeled as having a

learning disability, their school instruction will always be influenced by it. In some cases, a teacher may focus on this label given to the student instead of focusing on the child's speciic weakness.

Learner, as cited by Poostay and Aaron (1987), stated that most reading specialists do not use the term dyslexia or acknowledge it existence. Instead, they may treat them more as remedial readers that can be helped using various strategies.

There are many questions and statements teachers can use to encourage students to think more critically. When reading, a student can identify and formulate questions concerning the information as well as attempting to identify conclustions and similarities and differences (Ennis, 1985). When attempting to solve math equations, students should not simply memorize the steps, but try to understand the logic behind the steps. Teachers can ask questions to draw these responses from the student (Ennis, 1985).

The writer used the information gathered with the mentor and the second grade level concerning the target group to design a program to help them reduce the number of reversals they exhibit. Based on the research gathered, the writer better understood why the dyslexic student has problems with reading, written language, and math. Flemming (1980) shared childhood and adult experiences of a dyslexic. This has embedded a more understanding and sympathetic view the writer has for children with these problems.

Along with reducing the number of reversals in the target group's academic work, a positive attitude towards school was a goal. By using approaches such as parent involvement, used by Bartlet, Hall and Neale (1984), a more positive attitude may be gained by the children. The writer will incorporate this concept in the implementation.

Students used skills suggested by Costa (1989) and Ennis (1989) to develop critical thinking. These included

student inquiry about the answers to questions and using logic to understand why an anwer is correct. The writer combined critical thinking strategies with the methodology used in implementation.

Chapter III
Method

Resources

The writer used materials obtained from one of the school's SLD teachers, which included manuscript and letter tracking book, and ideas for word finds. A set of sandpaper letters was also lent to the writer. The Chapter I teacher gave the writer a screen board to use for the Visual, Auditory, Kinesthetic, and Tactile (VAKT) portion of the study.

Throughout the study, the writer's mentor discussed activities to use with the group. The mentor suggested usage of the VAKT screen board and sandpaper letters. The mentor also recommended to the writer to use sequencing activities with the group, which was used in the tenth week of the study.

The second grade teachers cooperated fully with the writer in helping with the study. The writer had to schedule times to meet with the students in the other second grade classes.

This was a difficult challenge because the groups the writer worked with could be no more than two or three students in size. There were eight students in the study, and the writer tried to meet twice a week with each child. This meant that approximately six to eight times a week, the writer had to schedule to meet with the groups to meet the objectives of the study. Each meeting was held in the writer's room while the class was out of the room for P.E. or Art. One of the second grade teachers, however, taught a writing lesson to her class as well as the writer's class, while the writer took the study group from both classes. This gave the writer 45 minutes once a week to work with four of the children in the study group. Besides that time, the writer could only spend about 25 minutes for each meeting. There were times when the writer had to reschedule meetings because of holidays and special events that would cancel the normal meeting times. This was usually never a problem with the other teachers.

Monitoring

The writer obtained colorful pencils and notebooks with each child's name on them to store and record the information and activities for the study. Before the the study, all six second grade teachers said they had at least two students in their classes with reversal difficulties. However, before the study began, one of the teachers decided there were no students in the class that had reversal difficulties. Also, one teacher withdrew a student from the study, stating this student was needed more in the classroom, and did not have much of a reversal problem. Two children that began the study moved to another school. Instead of having 12 students as originally planned, the writer worked with eight students. Planning a schedule to work with eight students was difficult; planning a schedule to work with 12 students would have been extremely hard to do.

Week One and Two

The writer spent the first two weeks on testing the study group. This same test was used in the post test. The first series of tests dealt with word recognition of word forms, reverse word forms, and rhyming words.

The second test was two stories read to the writer by the student. One of the stories was written by the writer and contained many word and letters frequently reversed and transposed by dyslexics. The other story was taken from the basal and was on the reading level of the student. The writer observed any errors made y the student especially reversal errors.

A spelling test was given during the next test. Words taken from a first grade, second grade, and third grade spelling lists were used. Five words taken from each of the three grade levels were used on the spelling test.

The children in the study group each were asked to write a short story, consisting of five to six sentences. They then read these stories aloud to the writer, who noticed any transpositions or reversals.

The last test given involved an auditory and visual math test. The writer first called out addition problems for the students to solve. They were to write down each problem and then solve them. The second test was 12 addition problems, written down, for the students to solve.

Throughout the tests, the writer observed student attitude as well as academic problems with each student. There was a 33 percent decrease of reversal problems from the pre test to post test.

During the second week, the writer met with the second grade teachers for the first time during the study. Each teacher seemed aggreable to meeting every other week to discuss the progress of the children in the study group.

Week Three and Five (math)

The students used their fingers to trace over numbers, then painted each number, one through nine, as well as some double digits. They also used string and glue to make the outline of numbers one through nine. During the last sessions, the writer had the children practice their auditory skills with regards to their numbers. The writer called out numbers and each child turned to the page number that the child heard. Some of the children turned immediatly to the correct page, others paused a few seconds and asked for the number to be repeated. Still other children heard the number in reverse order. For example, two children turned to page 25 when the number 52 was called out. The writer pointed out and discussed any errors to the children.

Week Four and Six (language arts)

Reading and language arts were the concentrated areas in these sessions. In the first two sessions, the students traced their fingers over sandpaper letters. The writer had each child trace over those letters according to their defficiencies. After each child traced over the appropriate sandpaper letter, the writer called out a letter and each child drew the letter or letters on the table with the child's first two fingers. While the writer was working with each individual child, the rest of the group used large paintbrushes and painted certain letters, specified by the writer.

During the last sessions of these meetings, the students read a few stories to the writer. When one of the students made a vocabulary error, the VAKT method was used. The writer had the child write the word on a piece of paper that was placed over a piece of screen. The child then traced over

the word, sounding it out. Most of the time, the child got the word correct using this method.

While the writer was working with individual students, the rest of the group used the computer to work on language arts activities. Thoughout these two weeks, the writer encouraged the study to relate the subject matter to personal experiences.

Weeks Seven and Nine (math)

Students practiced auditory skills during these lessons. The writer called out numbers and the children wrote down the numbers they heard. One, two, and three digit numbers were called out. At the end of the exercise, the writer praised each child for correct answers, and discussed any errors that were made. The writer also stressed how to think in math skills, as opposed to what to think. Each child was expected to think through each mistake that was made, and understand what the correct answer should be.

Weeks Eight and Ten (language arts)

Oral spelling practice was emphasized along with sequencing activities during these weeks. First, the writer obtained the spelling list for that particular week. A practice spelling test was given. The writer went over the test when it was over, dicussing any errors in spelling or reversals. Sequencing skills were also practiced. The writer had each child write an activity in order. Students were involved in critiquing each other's thinking.

Week Eleven (review)

A brief overview of all the activities was presented in week eleven. The target group worked together in the review sessions, and actively listened to each other.

Week Twelve (post test)

A post test identical to the pre test was administered during this week. Because there was less time to give the post

test than the pre test, most of these tests were given to as much of the group as possible at one time.

Throughout the implimentation period, the writer observed when a student made any reversal or transposition. Immediatly, the student practiced the correct way to write the symbol.

Meetings of the second grade teachers were held every other week. The writer's portion of the meetings lasted no more than ten minutes. The writer followed an agenda to make each meeting as productive as possible. The writer also kept a log of each meeting for evaluative purposes.

During each student session, the writer made the learning atmosphere as positive as possible to help the learning environment. The students were positively reinforced throughout the study to improve the attitude each child had for school and the curriculum. Intrinsic as well as extrinsic rewards were given.

Chapter VI
Results

The results of the study had a positive result in every test on every student in the study group except student A. This child was given psychological testing during the study and became elegible for SLD Resource in Reading and Math, three weeks before the study ended. By having such an apparent disabilitiy, this child made many errors on the pre test and post test. Because of this, the writer showed two separate totals in the evaluation of the results from the test: those including Student A and those excluding student A. The writer felt that Student A's scores distorted the scores of the rest of the study group.

There were too many tests given in the pre testing period. In addition to the tests shown in Appendix F: 51, other pretests included story writing and tracking exercises.

These tests should have been used as one of the session activities instead of part of the tests. These activities were not given in the post tests. There was not enough time, and the writer did not feel it was necesary to include these activities in the post tests.

All of the students enjoyed meeting with the writer and the other children in the group. It was very important for the writer to continually praise the students and encourage them to make their letters and numbers correctly. Throughout the study, when the writer noticed a child making any type of reversal or transposition, the writer would have the child stop and correctly write the symbol. Rewards and praise were given often by the writer. The children enjoyed and responded well with both intrinsic and extrinsic rewards.

The total number of reversals expressed during the pre test was 98 (122 including Student A). The total number of

reversals expressed during the post test was 44 (76 including student A). This gave a total decrease in reversals of 122 percent (60 percent including Student A). The Objective of a decrease of 70 percent was met. The total average decrease of reversals per student was 51 percent (excluding Student A, who increased reversals 25 percent from the pre test to post test). (Appendices F: 51)

On the Student Attitude Towards School pre evaluation, the total number of positive answers was 95. The total number of positive answers on the post test was 133. This was an increase of positive responses of 40 percent. The objective for this area was to have an increase of 50 percent. This was not meet by only 10 percent. The students' increases varied from a low of five percent increase to a high of 111 percent increase. The average student increase of positive responses was 46 percent. (Appendices G: 53)

According to the Student Critical Thinking assessment sheet, students improved tremendously from the beginning of the study to the end of the study. The total number of positive responses on the pre test was 36. The total number of positive answers on the post test was 66. This was an increase of 83 percent. The objective of having an increase of 50 percent was met. The range in positive responses per student was from 29 to 200 percent increase, with an average increase of 99 percent. (Appendices H: 55)

The writer feels that the communication between the second grade teachers improved throughout the study. Because these teachers' classrooms were so spread out from one another, it was difficult to communicate on a daily basis. The writer met every other week to discuss progress and procedures for reinforcement of the skills taught to the target group. Also, the writer encouraged discussion of other

subjects relating to the school. The teachers were almost always willing to meet with the writer, and most of the meetings were productive. (Appendices I: 57)

Chapter V
Recommendations

The writer's mentor contributed some excellent ideas that the writer used in the study. However, some ideas that the mentor suggested that the writer did not have time to use included using colored numbers and letters, or parts of words. A child might have a difficult time producing a correct '5' so the teacher could highlight all '5's' in one certain color. This, according to the mentor, will help a child remember the correct form. The mentor also stated that using florescent lights while working with florescent symbols in a dark room results in execellent correct feedback by children who had difficulties with reversals.

The tests used in the study worked well to determine the progress that each child had made. The writer would have kept everything about the study the same except for the number of

children in the study. It was difficult to schedule time to work with each child. Ideally, the group should have numbered no more than two per meeting. The meetings that the teacher works with the child should be at least 30 minutes of uninterrupted time in order to benefit the student. The writer found that, at times, the meetings were interrupted because of other committments or things out of the writer's control. Rescheduling was very difficult and usually could not be done. The writer attempted to fit the missed activities into the next meeting.

The writer will share the results of the program with the staff in various forms. An inservice with the teachers can be used to discuss the program. The writer will be avaiable for individual conferences with teachers expressing difficulties with children having reversals. The report will be avaiable in the media center for any staff wishing to view its contents.

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APPENDICES

APPENDIX A

STUDENTS' PROFILE

STUDENTS' PROFILE

Child	Reading Level	Behavior Withdrawn	Acceptable	Active	Comments
A	2-1			X	Repeated first grade. Very eager to please. Reverses often. Academic referrel in process.
B	2-1	x			Was put back one reading level. Academic referrel in process. Reverses letters.
C	2-2		x		Attends Chapter I. Has poor listening skills. Reverses letters.
D	2-1			x	Reverses letters.
E	2-1		x		Repeated kindergarten. Academic referrel in process. Struggles with work. Reverses letters.
F	2-1		x		Attends Bilingual program. Parents speak no English. Has reversals.
G	1-2	x			Repeated kindergarten. Attended summer school two years. Attends Bilingual program. Has reversal problems. Academic referal in process.
H	2-1			x	Eager to talk in class. Has reversal problems.
I	2-2		x		Has emotional problems as well as reversals.

APPENDIX B

OCCURRING REVERSALS

APPENDIX B

Name _____
Date _____

Occurring Reversals

Reading

Child	Oral Reading	Written Language	Spelling Test	Rhyming Words	Written Story
A					
B					
C					
D					
E					
F					
G					
H					
I					

Math

Child	Oral Test	Written Test
A		
B		
C		
D		
E		
F		
G		
H		
I		

APPENDIX C

STUDENT ATTITUDE TOWARDS SCHOOL

APPENDIX C

Name _____

Date _____

Student Attitude Towards School

A = Always S = Sometimes N = Never

Enjoys coming to reading group.	A	S	N
Enjoys reading aloud.	A	S	N
Volunteers to read aloud.	A	S	N
Complains when assignments are given.	A	S	N
Enjoys daily math sessions.	A	S	N
Is eager to learn new ideas.	A	S	N
Gets easily frustrated.	A	S	N
Has a positive attitude towards spelling tests.	A	S	N
Becomes frustrated when new words are introduced.	A	S	N
Practices spelling words in spare time.	A	S	N
Becomes upset when student mispells words on spelling test.	A	S	N
Seems to enjoy school.	A	S	N

APPENDIX D

STUDENT CRITICAL THINKING

APPENDIX D

Name _____
Date _____

Student Critical Thinking

A = Always S = Sometimes N = Never

1.	Students ask questions about stories they are reading.	A	S N
2.	Students relate subject matter to personal experiences.	A	S N
3.	Students actively listen to each other.	A	S N
4.	Students work together to solve problems.	A	S N
5.	Students give short or one word answers to questions that could be answered by more.	A	S N
6.	Students understand the relationships between related subjects or ideas.	A	S N

APPENDIX E

PRODUCTIVE GRADE LEVEL MEETING LOG

APPENDIX E Date _____

Productive Grade Level Meeting Log

Teachers were willing to meet this week. yes no

Teachers easily share own ideas with the other teachers. yes no

Number of times teachers deviated from school related topics. _____

The objectives of the meeting were covered. yes no

The meeting flowed smoothly. yes no

Additional Comments.

APPENDIX F

COMPARISON OF PRE TESTS TO POST TESTS

Appendix F 52

Comparison of Pre Tests to Post Tests

Student	Pre Test * Test Number/# of Reversals						Total
	1	2	3	4	5	6	
**A	1	10	0	1	2	10	24
B	1	4	0	0	1	0	6
C	0	6	0	0	4	16	26
D	0	8	16	5	3	0	32
E	0	0	0	0	2	3	5
F	6	3	0	0	0	0	9
G	2	4	1	0	5	8	20
	10	35	17	6	17	37	122

Student	Post Test Test Number/# of Reversals						Total
	1	2	3	4	5	6	
A	1	7	1	0	15	8	32
B	1	0	0	0	0	0	1
C	0	3	1	1	1	5	11
D	0	4	1	1	4	0	10
E	0	0	0	0	4	0	4
F	2	1	3	0	0	0	5
G	2	0	1	1	3	6	13
	6	15	7	3	27	19	76

*Tests given to study group: (See Attachments.)

1 - Spelling 3 - Reverse forms 5 - Rhyming forms

2 - Stories 4 - Similar forms 6 - Math

**This child was staffed part-time SLD in the last two weeks of the study

APPENDIX G

EVALUATION OF STUDENT ATTITUDE TOWARDS SCHOOL

Appendix G

Evaluation of
Student Attitude Towards School

Student	Pre Test Positive Answers	Post Test Positive Answers	Percent Increase
A	16	22	38
B	18	19	5
C	13	19	46
D	17	22	29
E	9	19	111
F	11	19	73
G	11	13	18
Total	95	133	

Total increase in positive responses: 40%
Total average increase in positive responses: 46%

APPENDIX H

EVALUATION OF STUDENT CRITICAL THINKING

Appendix H

Evaluation of Student Critical Thinking

Student	Pre Test Positive Answers	Post Test Positive Answers	Percent Increase
A	5	10	100
B	7	9	29
C	6	7	16
D	4	8	100
E	7	12	71
F	4	11	175
G	3	9	200
Total	36	66	

Total increase in positive responses: 83%
Total average increase in positive responses: 99%

APPENDIX I

EVALUATION OF PRODUCTIVE GRADE LEVEL MEETINGS

Appendix I

Evaluation of
Productive Grade Level Meetings

Meeting Number	Positive Responses	Comments
1	4	"My part of the meeting was ten minutes. I followed an agenda. Additional meeting items of the teachers lasted 20 minutes. The other teachers deviated from school related topics twice. They seemed in a hurry to have the meeting over."
2	1	"Meeting was very brief-actually, it was hardly a meeting at all. I went to each teacher at the faculty meeting before that meeting started. I asked them to fill out the CTS list for their students in the study group.
3	4	"I asked the teachers if they were seeing any improvements in their students that were in my study group. All agreed they saw improvements and gave me specific reversal changes they saw"
4	4	"I discussed the progress of each student with the We went over other school related topics for twenty minutes. Teachers deviated from school related topics four times."

Meeting Number	Positive Responses	Comments
5	4	"I handed out the post evaluations on Student Attitude and Critical Thinking Skills to the teachers. They immediatly filled them out. They were willing to meet and we discussed end of the year projects that would involve the second grade teachers. The group deviated from school related topics four times."

Meeting Results

	Meeting Number				
	1	2	3	4	5
Teachers were willing to meet this week	Y	Y	Y	Y	Y
Teachers easily shared own ideas with the other teachers	Y	N	Y	Y	Y
Number of times teachers deviated from school related topics	2	NA	2	4	4
The objectives of the meeting were covered	Y	N	Y	Y	Y
The meeting flowed smoothly	Y	N	Y	Y	Y

ATTACHMENTS

SPELLING TEST

Pre test and Post test
Spelling Test

1. at
2. cat
3. ran
4. cap
5. sit

1st grade level

6. tray
7. feel
8. paint
9. sneak
10. seen

2nd grade level

11. this
12. plant
13. big
14. pin
15. saw

3rd grade level

STORIES

The Big Pig and the Bad Bug

A long time ago, there was a pig that lived on a farm in a brown barn. This pig was big. His name was Fred, and he was very happy in the brown barn.

One day, a girl with a doll came into the brown barn. She had a small bag with her. She put her hand in the bag and was able to pull out an apple. She put the apple on the table, then went to get the big pig, Fred. While she was gone, a bad bug got on top of the apple and bit it. This bad bug went inside the apple and took three more bites out of the apple on the table.

When the girl came back from getting Fred, she saw that there were four bites out of the apple. She did not know how those bites got there, but wanted to give the apple on the table to Fred anyway.

So, the girl with the doll gave the apple to Fred, the big pig, and no one every saw that bad bug ever again.

ANIMAL COLORING

What do you see when you look at this picture? Do you see rocks? Take another look. There is a bird hiding there.

Many animals have coloring that helps them to hide. This bird's coloring is very much like the colors of the rocks. That is why it is hard to see the bird.

These tigers are looking for something to eat. They are waiting in the field of grass. A tiger's stripes help it to hide in the grass.

Spots can make animals hard to find, too. This little deer is hiding in the leaves. The deer's brown coloring and white spots help it to hide.

Some animals can even change colors. A tree frog is one of them. If a tree frog is on a green leaf, its color will be green. But you can see by the other picture that a tree frog is not always green!

Two Good Friends

Duck was looking at his clean house. Just then someone came to the door. It was Bear. "Come in," said Duck, "but first you must clean your feet."

Bear cleaned his feet and went inside.

"Make yourself at home," said Duck. "Come in and sit down."

Thank you, I will," said Bear. He sat down in Duck's rocking chair. Then he put his feet on Duck's table.

"Bear, put your feet on this paper," said Duck.
"What do you have to eat?" asked Bear.
"Nothing," said Duck.
"Nothing to eat?" asked Bear.
"Today I cleaned house," said Duck. "I did not cook."

"Well, I have something," said Bear. He took two cakes out of his pocket.

WORD LISTS

VOCABULARY

Reverse Word Forms

taps	spat	taps	step	spin
span	spin	span	naps	nips
bus	sub	spud	bus	stub
dab	add	bad	able	dab
tan	ant	nat	tan	nut
stun	nuts	stun	net	tons
pat	spat	tub	pat	tap
trap	rat	part	trap	trip
wolf	flour	wolf	flow	loaf
step	tap	pets	step	eat
pots	stab	tops	stop	pots

Directions: Circle all the words in each row that look exactly like the first word in each row. You have one and a half minute to complete the page.

Vocabulary

Similar word forms

them	thought	mat	them	they
stay	ashtray	yet	test	stay
were	were	was	went	ear
apple	able	apron	apple	plate
was	straw	were	saw	was
can't	not	talk	can't	sent
seem	mess	sent	seem	smash
bump	pump	hump	jump	bump
down	frown	bown	down	town
pretty	taps	betty	pretty	patty
wide	side	wide	mile	pipe

Directions: Circle the word(s) that look like the one in the row to the left of each word. There might be more than one.

RHYMING WORDS

chair	fair	cherry	table	hair
cat	fat	dog	hat	net
slip	lip	fall	hip	pill
leaf	deaf	tree	beef	reef
hat	tap	cap	that	cat
cot	bed	hot	cat	lot
stone	own	one	rock	phone
sun	run	moon	ton	sand
fly	bug	why	tie	flat
slow	no	fast	low	now

Directions: Circle all the words in each row that rhyme with the first word in the row. You have one and a half minute to complete the page.

MATH TEST

Math

1. 2 +2	2. 4 +3	3. 4 +1	4. 6 +3
5. 2 +3	6. 13 +22	7. 23 +14	8. 47 +24
9. 69 +28	10. 43 +10	11. 6 +1	12. 9 +6